

SESAR Deployment Manager (SDM) Workshop on Free Route Airspace (FRA)

Brussels
13 February 2019.



WHY TO GO FOR FREE ROUTE?

WHAT SHOULD BE CONSIDERED?

HOW ATM SYSTEM CAN SUPPORT FRA IMPLEMENTATION?

WHAT IS THE WAY FORWARD?

WHY TO GO FOR FREE ROUTE?

I.

- **ATS route network was developed in the years when the navigation was based entirely on the use of ground equipment; (NDB, VOR, DME)**
- **En-route Air Traffic Control was mainly procedural, and also the separation of aircrafts was ensured on signals provided by ground based navigation equipment; (ICAO DOC 4444)**
- **With the arrival of low-cost airlines, the traffic began to grow explosively and with the continuous improvement of the ATS route network (led by the Route Network Development Sub-Group of EUROCONTROL) the European ATS Route map become similar to a sewing pattern of Burda magazine.**
- **Despite the steady increase of the available ATS routes the need for opening of new and more direct routes still remains the top priority for aircraft operators.**

WHY TO GO FOR FREE ROUTE?

II.

- **With the introduction of the free route airspace, a number of issues arising from the fixed ATS route network can be addressed;**
- **Free Route is not a Nostrum/cure-all, it is a headache for controllers, because of the increased complexity, while not providing any capacity enhancement;**
- **Benefits of the Free Route operation:**
 - **Significantly more option for flight planning,**
 - **Shorter route option,**
 - **Fuel savings,**
 - **Less fuel less emission,**
- **From the list it is clear that the aircraft operators are the only beneficiaries of FRA operation, but it is OK, since the ATC nothing else than a service;**

WHAT SHOULD BE CONSIDERED?

I.

- Apart of the characteristics of the traffic in the airspace where the implementation of FRA is planned, the capabilities of the ATM system shall be adequate;
- In particular the ATM system:
 - should have an area of interest sufficiently covering the adjacent airspaces,
 - should be able to process FPLs having only points (5LCN, NAVAIDS etc.) in field 15,
 - should provide graphical presentation of the planned flight path, preferable beyond the FIR border,
 - should provide Short Term Conflict Alert,
 - should support the electronic inter-sector coordination both in vertical and horizontal dimension,

Availability of MTCD is a prerequisite for FRA implementation?

- **It's always good to have a tools for conflict detection, and sooner the conflict is detected more easier it can be solved.**
- **Our experience proved that even with MTCD at a certain traffic density the ATCOs are simply unable to check each conflict detected and listed in the MTCD window, so I would encourage ANSPs, which do not have yet medium term conflict detecting tool implemented in their ATM system to feel free to consider the possibility of introducing FRA.**
- **Advance OLDI message exchange (REV, ROF e.g.) with adjacent ATC centres is very useful allowing more time for PC to take part in conflict detection.**

HOW AN ATM SYSTEM CAN SUPPORT FRA IMPLEMENTATION?

FLIGHT DATA PROCESSING PART of the ATM system:

- Should provide good flight profile calculation, (sector sequence etc.),
- Should be able to check different "what if" route and flight level options,
- Should provide warnings for ATCOs, like Route Adherence Monitoring, Area Proximity Warning,
- Should provide Separation information based on the Flight Plan route,

RADAR DATA PROCESSING PART of the ATM system:

- Should be able to present DAP information to ATCOs,
- Should provide STCA warning, and preferably STCA pre-warning, and also CFL Adherence Monitoring,
- Should provide Separation information based on the radar track movement,

WHAT IS THE WAY FORWARD?

THE ATM SYSTEMS MUST TO BE DEVELOPED IN A WAY:

- To support the Cross-border Free Route Operation,
- To provide Solution for Tactical Separation,
- To process downloaded 4D trajectory,
- To provide solution for „BLIND SPOT”,
- To support advanced Air Traffic Management solutions, like FLIGHT CENTRIC ATC,
- To support dynamic cross-border sectorisation,
- To provide work load forecast and optimum sector configuration suggestions, based on multi-source information,

THANK YOU FOR ATTENTION,
QUESTIONS?

An abstract graphic consisting of numerous thin, white, wavy lines that create a sense of motion and depth. The lines are arranged in a series of overlapping, undulating shapes that flow from left to right across the frame. The background is a solid, vibrant blue. The lines vary in density and curvature, creating a dynamic, almost organic feel.

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